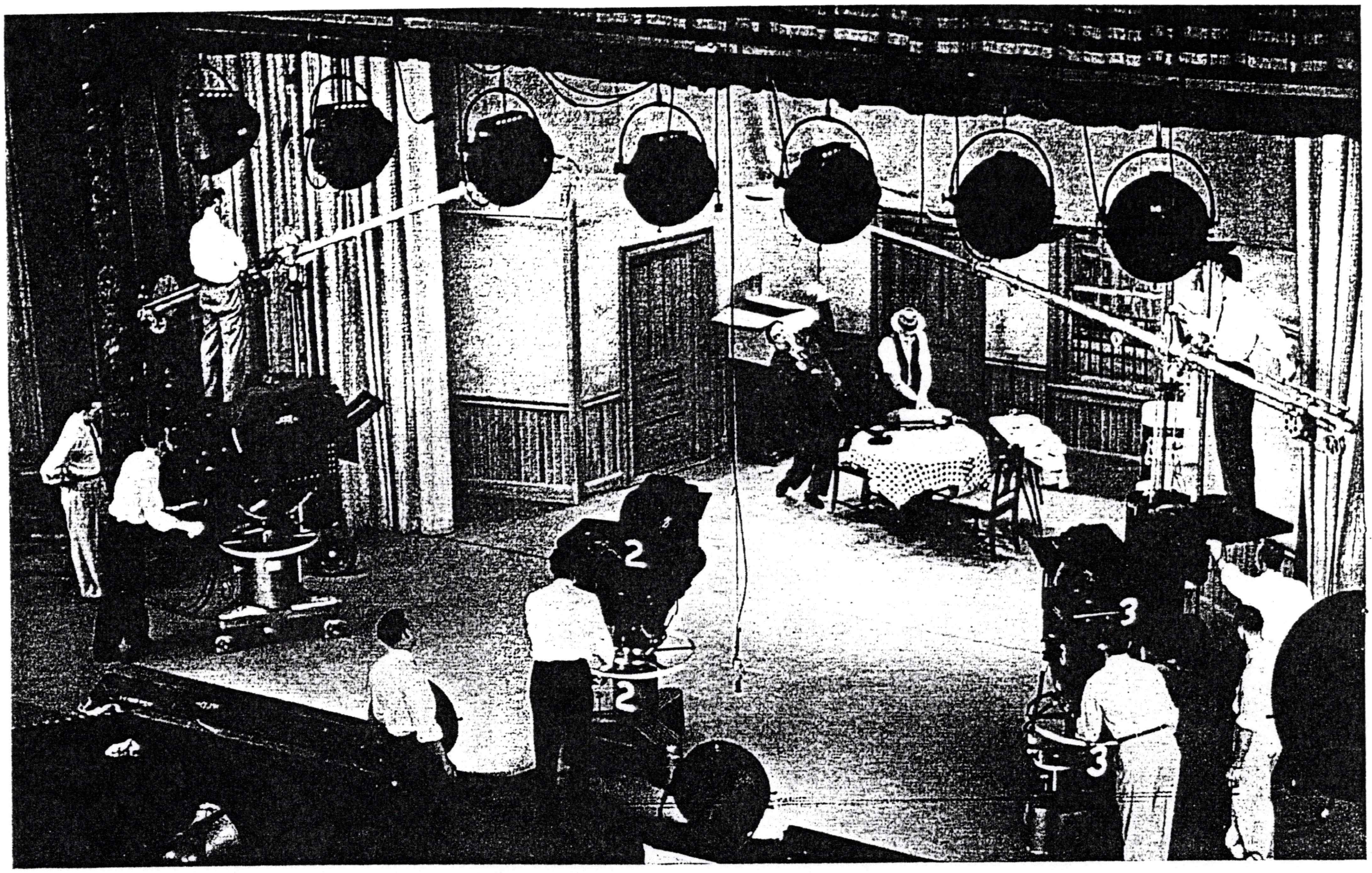


THREE PICK-UP units of Du Mont's new "Electronicam" TV-film system concentrate on Jackie Gleason and Art Carney in a scene being filmed by the process before a live audience in New York's Adelphi theatre. Electronicam combines TV techniques with highest-quality 35mm photography, reducing shooting time to a fraction of old-method requirements.

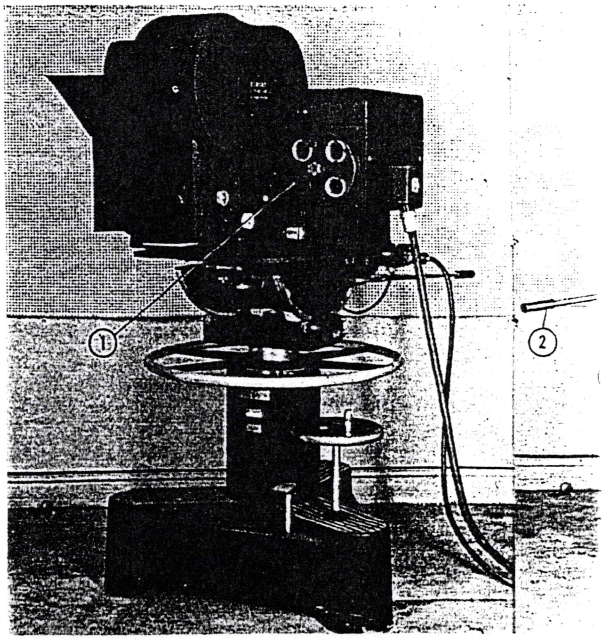
GLEASON GOES "LIVE ON FILM"

First to use the video-film camera in major TV film production is Jackie Gleason who is putting "The Honeymooners" segment of his weekly TV show on film, using Du Mont's new Electronicam system

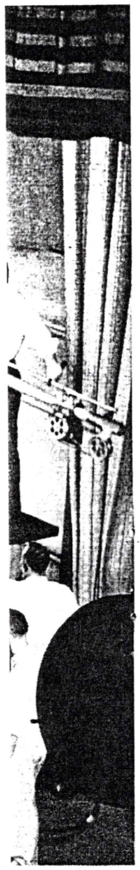
By LEIGH ALLEN

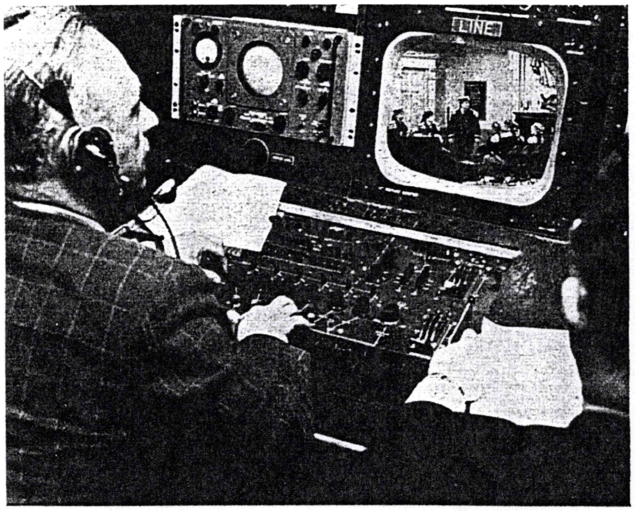
OF THE THREE video-film systems developed and introduced to date, the Du Mont Electronicam is the first and only one to go into practical television film production. "The Honeymooners," most popular feature of Jackie Gleason's weekly 60-minute television show, is the first major TV program to go before the Electronicam cameras.

The Du Mont Electronicam system, as reported earlier in the May, 1955, issue of *American Cinematographer*, is a new and completely engineered method of recording programs on film through the use of "live" television techniques. It differs from "live" television only in that the permanent recording, for "delayed" markets and subsequent re-runs, is a

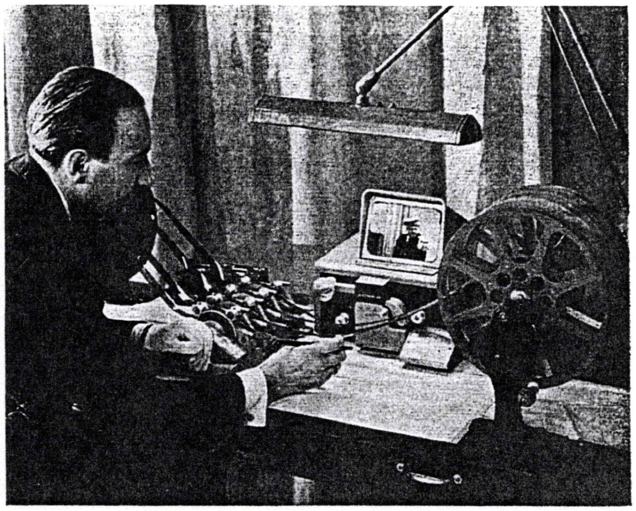


FRONT VIEW of pick-up unit of new Du Mont 35mm Electronicam TV-film system. Mitchell film camera is on left, TV camera at right. Light passing through Mitchell lens is split into two parts—one to the film, the other via prism (1) to TV camera.





SWITCHING and control panel which permit studio engineers to edit and develop the "editing master," used with the Electronicam system, in rapid cutting of the final high quality film. Special effects such as fades, dissolves, etc., which are electrically created appear in the "editing master."



THE GLEASON show footage shot with the three Electronicam cameras is rapidly edited into a final fnished product for distribution by means of the editing equipment shown here. Here the "editing master" is run through the viewer and the various takes in the three camera films selected for cutting into the master print.

camera-photographed motion picture—either 16mm or 35mm—instead of a kinescope with its poor quality and extremely limited use.

Electronicam differs from the conventional motion picture filming in that

(a) it permits cameramen and directors, by means of normal television viewfinders on the camera, and by monitors in the control room, to see what they are recording on film as each scene is being shot. No longer do they have to shoot "blind" and wait till "rushes" are developed before they know whether they got what they wanted, or whether retakes will be needed.

(b) it enables production units—once they are set up and rehearsed—to record a complete program in no more time than it would take to put that same program on the air live, using as it does, the same TV personnel and the same TV techniques with which all hands—performers and technicians alike—are familiar. Putting a program on film so fast, so smoothly is unheard of in modern film production. But it is this very identity of method which guarantees that the filmed program will have the naturalness, spontaneity and "look" of a live telecast, Du Mont engineers point out.

(c) it cuts costs sharply through the speed-up of both production and editing processes.

The heart of the Electronicam system is a new type of camera, tied by ingenious adaptation to all the production aids of a modern television studio.

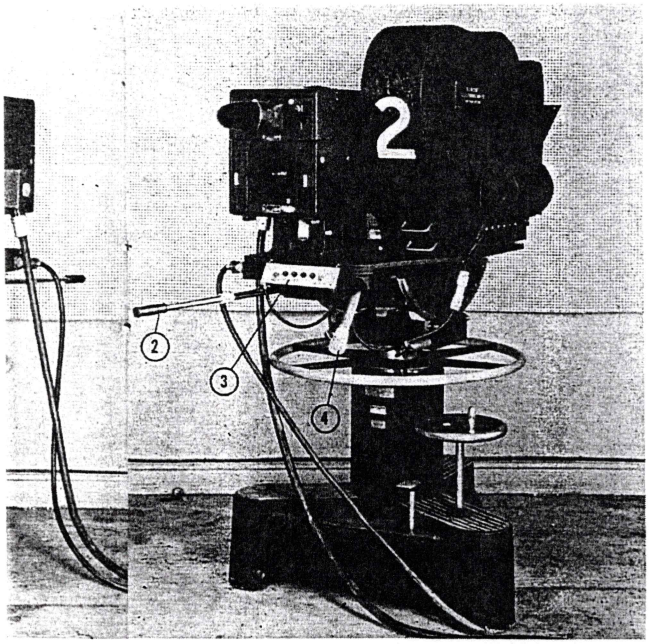
The camera itself is manned by a tèlevision-trained cameraman. It is equipped with an electronic viewfinder through which the cameraman sees the exact picture being filmed just as he would his take in shooting a live telecast. At the back of the camera is a focus control which the cameraman uses to obtain perfect focus and the best possible picture composition—even in rapid camera movement. Each camera is equipped with a turret having three lenses which may be changed instantly. Camera mobility, ease of focus and picture composition are those of live television. Gone are the tape measurements, the tracks, the uncertainties and delays of conventional filming methods.

If the production is a multiple camera effort, all cameras run simultaneously and continuously and record the entire program—each from its own position. The picture from each camera travels through live television equipment to a related monitor in the control room. There the director completely controls the camera choice just as in a live TV show. He is actually monitoring the production of a film show, calling his choice of shots onto the "take" monitor, and simultaneously feeding them to standard "kine" equipment where a teletranscription is made as an editing guide. This teletranscription includes all the special effects—dissolves, fades and superimpositions as they come along naturally in the program. They can then be readily duplicated by optical methods as in any film process.

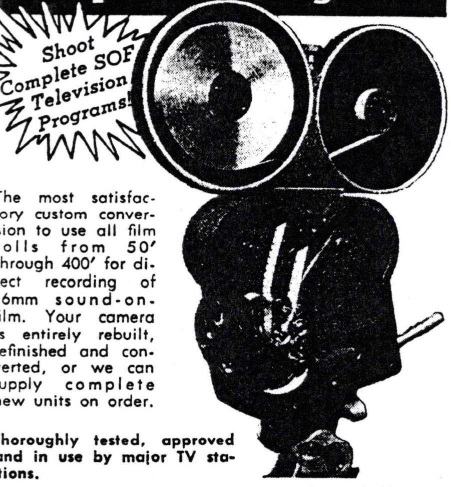
The sound track is produced simultaneously by a choice of conventional motion picture methods.

After the program is shot, all the film

(Continued on Page 598)



REAR VIEW of Electronicam pick-up unit, showing simple controls available to the operator. Control handle (2) guides camera in panning operation. The panel (3) affords push-button selection of camera lenses. Handle (4) affords remote control of focus.



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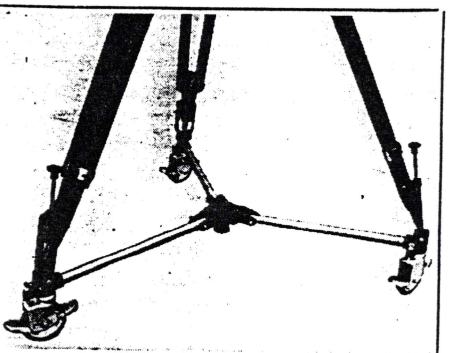

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(Continued from Page 585)

is sent to a laboratory and processed. The director examines the teletranscription which can be made available within hours after the completion of shooting, and which represents his original choice of scene and sequence. If he is satisfied he says "print it," and the individual reels of film from each camera. plus the sound track, are locked in synchronization with the teletranscription, and run through editing equipment for an expedited and simplified cutting and splicing process.

If the director indicates a preference for other shots than his initial choice. coded and timed "takes" from another camera may readily be substituted at this point, and the finished master sent to the printer.

Thanks to exclusive Electronicam short-cuts, the weeks of conventional editing toil are cut to days in this system.

Performers and producers like the Electronicam for the results that it gives them, artistically. Sponsor and agency executives like it for more practical reasons—for its economy, and for all the advantages inherent in film.

The economy and efficiency of the Electronicam system of recording programs on film as compared to conventional methods are quite apparent to all familiar with the older process, and these elements immediately become apparent in the dollars-and-cents cost picture.

The economies start early and run through every step of the operation, because they are the economies of live television as compared with motion-picture methods. The Electronicam, for example, permits quick setting up. The enormous amount of costly time now taken in setting up cameras on a scene-to-scene basis can be eliminated in favor of television technique which features continuity of action. This operation, particularly in elaborate productions where large groups of performers and many sets are being used, can be especially costly, Du Mont engineers point out.

In the Electronicam system, on the other hand, the individual camera monitors in the control room are used by the director in blocking and setting, in rehearsal—without any film being run—and during actual shooting, with obvious economies in time and cost.

Jackie Gleason and his company—Art Carney, Audrey Meadows, and Joyce Randolph—are putting two programs a week on 35mm film at the Adelphi theatre in New York for "The Honeymooners" series, which will go on the Columbia Broadcasting System under Buick sponsorship this Fall. Gleason has found that he can work with the new camera exactly as he has worked on live TV

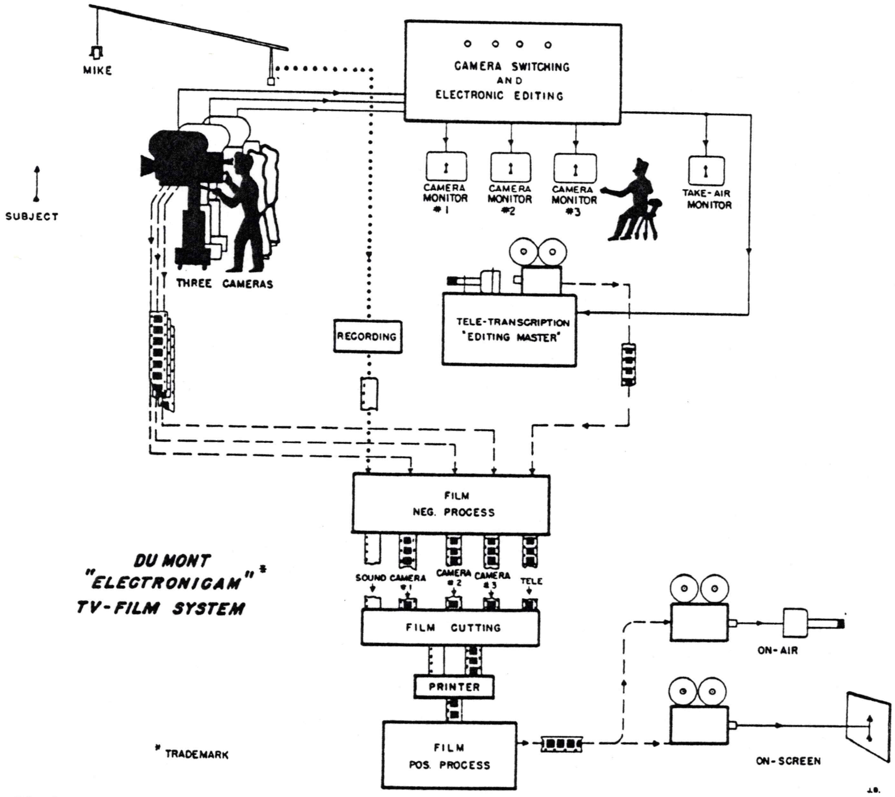
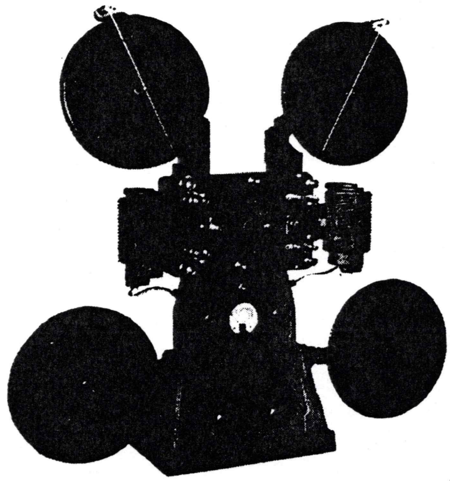


DIAGRAM shows how Electronicam system works from time scene is photographed (upper left) to the finished film image ready for projector or air transmission (lower right). The three camera images are recorded on motion picture film at same time they are sent electronically to camera switching panel where the selected "takes" are recorded by teletranscription.



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and, for that reason he's confident that he will come up with a show that will have all the bounce, all the spontaneity and naturalness of his live telecasts.

He and his company come to rehearsals around 2 p.m. Tuesday and Friday afternoons, run through their lines and action till 3:30 or 4, and then break for dinner. Back at 8, they find an audience of 1200 awaiting them, and they film the show in the same time it takes to perform it—recording laughs and fluffs just as they fall for what Jackie calls "an honest performance."

As may be seen in the photo on page 584, three Electronicam 35mm cameras are used. The crews for each consist of a first film cameraman, an assistant film cameraman, a television cameraman and one cable boy. After the cameras are set up and the set is lit, the television cameraman does the actual recording or operating.

The cameras work consistently at an aperture of f/5.6, using Tri-X film, and all three operate continuously even when their respective pickups are not selected for the "line" by the director sitting at the master monitor.

Warren Wade, one of television's best known pioneer producers, is filming his award-winning "Broadway TV Theatre" with Electronicam on 16mm film at the Telecenter.

Several program packages have also put pilots for their Fall productions on film via Electronicam.

One of them who made a 90-minute show famous says that the Electronicam system alone makes the filming of such a series a practicable matter. "Our series," he adds, "was successful because the program gave viewers the sense of actually sitting in a theatre watching a hit. Live TV caught the mood, the feel, of the production and got it across to viewers. Conventional film production methods have never been able to do that. The Electronicam, however, gives a producer all the flexibility and mobility of live television.

"Under the old conventional system, a producer was required to shoot his play in segments, wait to look at the rushes of what he had done, and go on and shoot some more—a procedure that interrupted the flow of thought and action, simply destroyed dramatic impact. Once we start dramatic action in front of the Electronicam, we run right through to the end. With the Electronicam we can put the whole play on film in not much more time than it would take to telecast it, thus maintaining the mood heretofore associated only with live production."

Another program packager is putting five episodes of a serial drama on film in one day of shooting plus one day of setting up and lighting—with the approbation of his sponsor, and the cooperation of its agency. A job like this, the producer says, would have cost so much that, despite the advantages of film, he had always kept the show on the air live. (It is currently a daily feature on NBC-TV.)

Another producer tried for a long time to get his five-day-a-week serial on film. For one week's series, he requires fifty minutes of film. He sought estimates from several established film production firms. Their estimates ranged from a low of $15,000 to a high of $18,500. With the Electronicam, he will be shooting his required 50 minutes on the schedule given above at costs within his budget.

Another feature that a packager likes about the Electronicam is that working with this system he can retain his producers, directors and actors—all television people who continue to work with techniques already familiar to them.

The new 35mm Electronicam pick-up unit, developed by Du Mont's Research Laboratories engineers, offers major improvements over earlier versions of the system. It includes an especially designed and adapted Mitchell motion picture camera with an image-orthicon television camera in a single operating unit. High quality films may, therefore, be made using electronic viewing screens as a guide in shooting a picture and incorporating the same fast production techniques that are an integral part of live television programming.

In the 35mm Electronicam, an optical system splits the light so that it is shared by both the film and the electronic pick-up sections of the Electronicam simultaneously. The proportion of the light sent to the two pick-up units may be varied widely depending on the type of film used and the lighting conditions under which the footage is exposed.

The sensitivity of the image-orthicon camera—it requires much less light than a movie camera for satisfactory operation—permits the light to be split in such a manner that the film pick-up section receives a maximum of the available light being used at any time.

The new 35mm Electronicam operates with the same facility as a conventional television camera, allowing the same freedom of movement and ease of focusing. A handle at the rear controls focus for the common lens system. This permits continuous control of focusing throughout the shooting sequence. Thus, the advantages of television "ad lib" focusing and camera direction are made available to the motion picture director. The operator of the Electronicam pick-up unit determines the focus by looking at the image in the unit's electronic viewfinder.

A new panel control on the 35mm Electronicam permits any one of a

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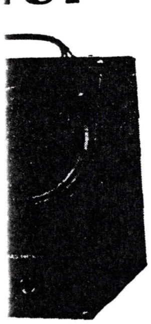

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group of lenses to be selected electronically by merely pushing a button. Another new development used with the 35mm Electronicam is a footage and elapsed-time counter. This device, situated in the control room of the film production center, indicates the amount of film footage which has been exposed on any Electronicam unit being used and the amount of running time which is represented by the footage exposed. Film producers, therefore, have an instantaneous means of checking from a single point the operation of each camera in use as an aid in timing programs, an important factor in television broadcasting.

Du Mont's engineers say that Electronicam will prove especially valuable in the production of color films for television. Live color programming today suffers from a lack of uniformity in the technical quality of the pictures presented from one camera to the next. This is partly due to electronic instability in the color television cameras and to the fact that the quality of the pictures presented by each camera varies widely. In contrast, the 35mm Electronicam permits a program to be filmed in color with rigid control of the shooting at all times so as to achieve a uniformity of quality that cannot be equalled by live color programming. Electronicam also gives results which are far superior to any present method of electronic recording on tape.

According to Du Mont, 35mm Electronicam units will be made available on a national basis for use by the motion picture industry, TV film producers, television stations, and for production of industrial, educational and governmental films.

FILMING FOR PHILCO

(Continued from Page 592)

These films serve many useful company purposes. They acquaint our distributors and dealers with the new lines in production or shown at our semiannual conventions; they explain to the world-wide family of Philco dealers, as well as to prospective customers, the newly developed features, styling and electronic advancements; also, we produce television commercials and spot announcements for general public dissemination.

Filming some difficult shot can lead to a score of technical difficulties, but having access as we do to some of the best electronic brains and equipment in the world proves invaluable in solving some "impossible" problems. Like the one recently that called for a shot of a television receiver with picture and with the screen action appearing in synchronization with a woman's hand operating a remote control unit changing the TV station. (Fig 1.) While rear projection seemed to be the answer, still a number of problems remained to be solved.

First of all, the projector shutter had to be synchronized with the camera shutter so that each would open simultaneously for the exposure, then advance together at the precise same time. The external drives of the projector and the camera would have to be run at the correct number of revolutions to achieve 24 frames per second; which incidentally, did not match RPM for the required 24 second frame speed.

It was necessary to light the set so that no illumination fell on the translucent screen; station flopover had to be introduced with each station change; the channel selector knob rotated; also, the actress cued when to press the automatic tuner switch . . . all of these to take place almost simultaneously, in their proper sequence.

Two Selsyn motors, one on the camera and one on the projector, were electrically interlocked. These were driven by sync motors on the Arriflex (Fig. 3) and the projector. (Fig. 2) through chain drives which were appropriately geared. This solved the equipment sync problem.

The personnel sync-cueing-system was simply performed by applying an inch-long piece of magnetic tape along the sound edge of the film at a 50 frame distance before each scene change. The projector was operated with the magnetic playback head functioning, thus establishing an audible cue of one second as to when to expect the film scene change (26 frame normal track advance; 24 frame for the one second cuing advance).

Drawing from our bag of production and lighting techniques, we came up with a sequence meriting the approval of film layman and expert alike. We work with a concise, yet efficient variety of cameras and filming equipment, both 16mm and 35mm; we use our own ever-expanding prop department, and construct the majority of our sets.

Prior to actual production, each day's anticipated shooting is carefully analysed, enabling us to prepare talent, props, camera and actors' action in establishing a pre-conceived shooting plan. Each job is tackled as a direct challenge from which to put the best into each frame; working diligently at improvement until we feel that optimum results are safe within the can.

An unusual shot may require days of camera planning and execution, and last but a few seconds on the screen; but, if it sparks the visual impact necessary to drive home a noteworthy point of information to the viewing audience, it warrants the effort expanded. **END**